Results. RTOG acute toxicity was GU: G0 9(13%), G1 44(63.7%), G2 14(20,3%), G3 2(3%); GI G0 31(45%), G1 31(45%), G2 7 (11%), G3 0. RTOG late toxicity was GU G0 46(66.6%), G1 18(26%), G2 4(5.8%), G3 1(1.4%); GI G0 61(88,4%), G1 7(10.1%), G2 1(1.5%). IPSS score: 11 before RT, 16.5 after and 9 at 3 months. Quality of life due to urinary symptoms was better at 3 months. QLQ-C30 global health status was similar. QLQ-C30 functional scales: slight drop in physical and role functioning. QLQ-C30 symptoms scales: fatigue and insomnia were slightly higher at 3 months. QLQ-PR25 functional scales of sexual activity and functioning were low in this population and remained lower at 3 months. QLQ-PR25 symptoms scales: worsening of urinary and bowel symptoms after RT but with recovery at 3 months. With a medium follow-up of 12 months there is not any biochemical relapse.
Conclusions. Acute and late toxicity of Hypofractionated VMAT-IGRT were light and similar than other series. QLQ impairment was mild and acceptable. Further following is required to assess long term toxicity and disease control.

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Hypofractionation in prostate adenocarcinoma radiation therapy: Our experience

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Introduction. The low value of alfa/beta supports hypofractionated treatment schedules as therapeutic choice for prostate adenocarcinoma.
Objective. To explore a hypofractionated scheme as alternative therapeutic choice and demonstrate its potential benefits, dose escalation to 82 Gy, keeping acute toxicity at an acceptable level while shorten the overall treatment length
Methods. In October 2011 our Department implemented a moderate hypofractionation treatment scheme as a new pathway for prostate adenocarcinoma radiation treatment. Our hypofractionation protocol is based on a fraction dose of 2.6 Gy up to 82 Gy 2 Gy eq total dose, administered in 27 fractions. To derive the 82 Gy isoefect dose "Dhypo" the LQ model was used. Therefore, Dhypo = D2Gyx(d2 Gy + a/b)/(dhypo + a/b) where a/b represents the ratio alfa/beta for prostate adenocarcinoma. A value $a/b = 1.5$ was selected (Brenner and Hall, 1999) and $a/b = 6$ for normal tissue late reactions for rectum. It follows Dhypo = $82 \times (2 + 1.5)/(2.6 + 1.5) = 82 \times 0.85 = 70.0$ Gy. Rounding off fractions number, the PTV prescribed dose is 70.2 Gy, 2.6 Gy/fraction, 27 fractions. IMRT dosimetry calculation and treatment administration was performed. Treatment was daily image guided by Cone Beam CT. Patients were assigned to two study arms, each leaded by a clinician. First group maintained a standard fractionation while second group scaled to 2.6 Gy.
Results. In the period ranging from October 2011 and February 2013, 38 patients underwent daily CBCT image guided IMRT hypofractionated treatment, 12 low-risk, 10 intermediate-risk and 16 high-risk. Reported RTOG/EORTC toxicity at genitourinary level was G2:3, G1:16, G0:19. Rectal and intestinal toxicity G1:8, G0:30. Indication of pelvic lymph nodes irradiation for 11 of the 16 high-risk patients with intestinal toxicity G1:6, G0:5. Only one patient required urinary catheterization the last day of treatment
Conclusions. The obtained results show that hypofractionation is a suitable scheme for prostate adenocarcinoma treatment. Length of treatment is shortened while keeping acute toxicity at a standard fractionation level.

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Impact of magnetic resonance imaging in the local staging, risk group classification and treatment of prostate cancer patients with combination of high dose rate brachytherapy and external beam radiotherapy

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Purpose. To assess the impact of magnetic resonance imaging (MRI) staging for patients undergoing High Dose Rate (HDR) brachytherapy with external beam radiotherapy (EBRT).
Methods and materials. Seventy consecutive patients with intermediate risk and high risk prostate cancer underwent staging multiparametric MRI (high resolution TSE T2 in axial, sagital and coronal planes including the whole prostate and the seminal vesicles. TSE T1 axial from pubic symphysis to iliac bifurcation. DWI SS, Volumetric 3D VISTA TSE-T, 3D spectroscopy, MR Perfusion, 3D FFE T1 Fat Sat after intravenous administration of Gadolinium agent) The MRI findings were used to guide stage-appropriate treatment recommendations, and to assist in the preplanning and optimization of the brachytherapy isodose distributions

Results. Median age of the patients was 71 years (range 58–81), median pre-treatment PSA was 9.6 ng/ml (3.3–88.9). Eighty-three percent of the patients were Gleason ≥7. Forty seven percent had ≥50 of cores involved. Forty-eight percent of patient's PSA was ≥10 ng/ml. Pre-MRI staging was T1 in 70% of the patients, T2 in 26% and T3 in 4%. Of the 70 patients staged by MRI, 93% were upstaged from the digital rectal examination-based clinical stage; 47% of cT1-T2 patients were upstaged to cT3. This upstaging changed the risk group in 31% of the patients while using the NCCN classification and in 44% when the D'Amico classification was used. The treatment recommendation was modified in 23% and 44% of the patients using the NCCN and the D'Amico classification respectively.
Conclusion. Staging MRI impacts in the assessment of the local staging, risk group classification and treatment decision in intermediate and high risk patients undergoing HDR brachytherapy and EBRT. If possible, multiparametric MRI should be recommended for staging purposes in all patients undergoing radical treatment.

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IMRT (SIB) in high risk prostate adenocarcinoma: Institutional experience

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Purpose. IMRT using Simultaneous Integrated Boost (SIB) in patients with high-risk prostate cancer.
Material and methods. 137 patients diagnosed of high risk prostate cancer (HRPC) according to NCCN criteria, were treated during the period from July 2008 through December 2011, with mean of follow up of 35 months (5–88). The median age 68 years (45–83). The T stage ≥N2c was 50% of patients, Gleason ≥8 was in 56% of cases, more frequent 4 + 4 and more than 60% had PSA levels above 10 ng/ml. 34% with perineural invasion. The planning by computed tomography (CT)-scan was performed with immobilization of the lower extremities. SIB treatment plans for intensity-modulated RT (IMRT) was "step and shoot". Delimiting the following volumes: – PTV1 lymph node chains – PTV2 seminal vesicles – PTV3 prostate target, seminal vesicles and prostate with cT3b. – Organs at risk: Bowel, bladder, rectum and femoral heads. – A total dose of 54.12 Gy at 1.64 Gy was given to PTV1. 59.40 Gy at 1.80 Gy/fraction to PTV2 and 74.25–75.90 Gy in 33 daily fractions to PTV3. The most of patients received adjuvant hormonal treatment for 2–3 years.
Results. In HRPC for improve progression free survival is advisable to irradiate pelvical nodes, at the expense of carry the risk of increasing adverse effect rates in particular for small bowel. That is why is necessary to use more precise technique than 3D conventional treatment. We report the results of 137 patients treated by IMRT (SIB) Dosimetric results: 80% of patients had V70 of rectum less than10%. The mean of the maximal dose of rectum was 76.99 Gy (73.97–82.80 Gy). Small bowel: 60% of all cases had V30 less than 40%. Bladder: 90% of patients V60 < 40%. Toxicity results: According to RTOG criteria. The treatment was stopped in 2 patients for acute cystitis and proctitis GII. Acute rectitis GI-II observed in 20%. Acute enteritis 90% G0. Chronic toxicity: was around 20% of cystitis GI and only 1 patient suffered proctitis GIII. With a follow up of 4 years is early to observe the evolution in terms of survival outcome and biochemical control owing to the natural history of prostate cancer and adjuvant androgen suppression therapy.
Conclusion. The IMRT-boost protocol has integrated with very well tolerance of patients, reducing significantly the enteritis–rectitis high grade acute and chronic toxicity. It is necessary more time to see results in terms of locoregional and biochemical control.

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Is argon plasma coagulation (APC) effective in the management of chronic radiation proctitis?

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Introduction. In severe cases refractory to medical treatment, APC appears to be the preferred alternative to control persistent rectal bleeding of patients with chronic radiation proctitis. Only 6 articles including series with more than 30 patients have been published to date.
Objectives. The aim of this study was to assess the efficacy and toxicity of APC in the management of bleeding radiation-induced proctitis.
Methods and materials. Data from 30 patients were treated with APC due to chronic radiation proctitis, were reviewed retrospectively. All cases had prostate cancer and 9 of them (30%) underwent previous radical prostatectomy. The median dose of External Beam Radiation Therapy (EBRT) conformal 3D delivered was 74 Gy (range 46–76). Median rectal D1cc and D2cc was 72.5 and 72.4 Gy respectively. Median rectal V70, V60 and V40 was 12, 39,5 and 80%. Indications for treatment with APC were anemia and persistent bleeding despite medical treatment. Argon gas flow was set at 1.8 l/min with an electrical power setting of 40 W.